[redacted]

STATISTICAL INDICATORS OF ELECTROPHYSIOLOGICAL CHARACTERISTICS

ILLEGIB

[redacted] 1. INTRODUCTION ILLEGIB [redacted]

ILLEGIB The methodology of an exact science began to be realistically applied to the problems of experimental parapsychology with the development of statistical physics, technical cybernetics and digital (computer) mathematics. A distinctive feature of physical and physiological natural laws, which is associated with the parapsychological natural laws of the human organism, is the complex combination of stochastic and deterministic factors. By virtue of these factors, qualitative evaluations of similar states are, to a considerable degree, subjective in character. There is a tendency to apply qualitative criteria which are related to significant methodological errors arising from inadequacy of frequently used mathematical devices.

An increase in the precision of qualitative analysis of parapsychological phenomena may be achieved by using specially developed mathematical equipment and by utilizing a wide range of fast response computer techniques to analyze experimental data. Below, we will discuss the basic results of statistical analysis of electroencephalographical characteristics of the human organism, recorded in experiments during observations of different types of parapsychological states.

The theory of random functions was widely used by us as a mathematical device. The concept of random processes is an essential unification of fundamental concepts of random variables and vectors in the classical theory of probability.

Random processes may emerge in the form of a mathematical recording model of the electrophysiological characteristics of the organism, such as electrocardiogram, electroencephalogram,

B-2

myogram, bioplasmogram, thermogram, etc. Through the theoretical methods of random processes the following problems can be resolved:

1. Investigations of psychophysiological reactions to select a matched telepathic pair.

2. Analysis of spatial characteristics of the bioelectrical field activity of the brain to forecast optimal conditions for a telepathic experiment.

3. Evaluation of secondary physical phenomena (electrostatic conductivity of the air, ionization, electrolization of external objects) caused by the physical condition of the atmosphere and also by the bioelectrical processes of the organism during the time of extreme neuro-emotional stress.

Standard algorythms of statistical processes of electrophysiological characteristics will be considered before the review of specific results is discussed. These results were obtained through statistical analysis during parapsychological experiments.

2. STATISTICAL INDICATORS OF ELECTROPHYSIOLOGICAL CHARACTERISTICS

It is necessary to note that most electrophysiological devices provide registration of experimental data in the form of continuous curves X (t,T), defined at a finite time interval, T. Beside that there exist definite indications that primary processes which form a field of bioelectrical activity in reality have pulse characteristics. These pulses are produced by electrical reactions of the cells whose time model is expressed through a pulse series. Production of pulse reactions is caused by superposition of a multitude of sources of a discrete time structure and integration of biosignals by the macromolecular structures of the organism. The influence of the reaction of electrophysiological devices, as a rule, is not combined with wideband input signals. In the light of this discussion, the problem of processing such algorythms of statistical analysis, and experimental data, acquires an actual meaning which would allow us to account for structural characteristics simultaneously as continuous processes, and as equivalent discrete random processes. During the processing of continuous type oscillograms as obtained in (the process of) experimental investigations, we have used the principle of equivalent discrete series. According to this principle, a continuous signal of any nature (determinant, random stationery, random transient) may be transformed into a series of discrete levels through quantitization of continuous function X(t) by interval Δt_0, which in general cases may be selected through unequally spaced time intervals. After obtaining the sequence

of discrete coordinates of random process $X(t_o)$, $X(t_o + \Delta t_1)$, ..., $X(t_o + \Delta t_i)$, ..., $X(t_o + \Delta t_n)$, specified at moments of time t_o, $t_o + \Delta t_1$ ... $t_o + \Delta t_i$, ... $t_o + \Delta t_n$ subsequently we may evaluate entropy intervals between pulses on the basis of the formula by R. L. Dobrushin.

$$H = \frac{1}{K} \sum_{i=1}^{K} \log \Delta t_i + C$$

where Δt_i = pulse interval

$C = 0.577$ = Euler's constant.

During the analysis of a random steady state process with an autocorrelation function of $R_{//}$ (τ), the interval of the first order correlation τ_1 can be chosen as an interval of uncertainty Δt_o as defined by the expression:

$$\tau_1 = S_o^t \left| R_N (\tau) \right| d\tau$$

The uncertainty interval of the transient random process (G. A. Sergeev, A. F. Romanenko, 1964) is expressed in the form:

$$\tau_\lambda = \int_0^T R_N^\lambda (\tau)\, d\tau$$

A number of pulses N in equivalent pulse sequence of the stationery random process with the duration T is defined by the relationship:

$$N_1 = \frac{T}{\tau_{1\,avg}}$$

and the transient random process:

$$N_2 = \frac{I}{\tau_{2\,avg}}$$

The entropy of the first order is obtained by selecting $\Delta t_i = \tau_1 (t)$ in the steady state case:

$$H^I = \frac{1}{K} \sum_{i=1}^{K} \log \tau_i (t_K)$$

The entropy of the second order is defined by the transient case: $\Delta t_i = \tau_2 (t)$

$$H^{II} = \frac{1}{K} \sum_{i=1}^{K} \log \tau (t_K)$$

Earlier a possibility was established (G. Z. Sergeev, 1964) of using the expression $\psi = \frac{\tau_1}{\tau_2}$ as a generalized indicator of transiency.

However, with the introduction of concepts of the entropy of the first H^I and second orders H^{II}, the physical interpretation of this indicator over a considerable time period remained a difficult problem: to establish a relationship between the transiency indicator ψ of the continuous random process $\chi (t)$ and entropy characteristics H^I and H^{II} of the equivalent discrete process. This relationship is given by the formula:

$$\psi = e^{H^I - H^{II}}$$

This equation may be reduced to the relationship: $\log \psi = H^I - H^{II}$ from which it follows that the higher the level of transient random process is, the more difference there is between the entropy levels of the first and second orders.

Experimental investigations of the bioelectrical activity phenomena in the processing of parapsychological experiments show that the state of increased neuro-emotional stress is as a rule associated with an increase of the transient indicator ψ.

Physically, it is explained by the increase of intensity in the bioelectric processes at the cell level and, in particular, the displacement of the bioelectric reaction spectrum into a high frequency region. A typical graph of this relationship, the transient indicator ψ and the difference between entropy levels $\Delta H = H^{I} - H^{II}$, is presented in Figure 1. The shaded area corresponds to the stability region in whose limits the steady state reaction of bioelectrical activity processes are observed.

Investigations have shown that the steady state composition is characteristic for an even-tempered, calm individual. Phases of increased neuro-emotional stress, typical of the induction mode, are characterized by the increased value of the transient indicator relative to the lower threshold and stability region, and appeared representative for the psychophysiological condition of the percipients. The typical expressions for the transient indicators of the bioelectric activity processes and fluctuations of the physical field are presented in Table 1.

TABLE 1

Object	ψ min	ψ max	ΔH min	ΔH max
Newborn baby	3	5	1.1	1.6
Rabbit	2	5	0.70	1.6
Individual with disturbed psychic functions	3	7	1.1	1.95
Normal individual	2	60	0.70	4.1
Earth Geomagnetic Field	3	11	1.1	2.4
Photosphere of the Sun	3	11	-	-
Telesthesia	2.5	9	0.92	2.2
Telekinesis	2.5	7	-	-

Considering the above table, it follows that the transiency of bioelectric activity processes is characterized by a change in the maximum limits from $\psi = 2.0$ to $\psi_{max} = 60$, overlapping the degree of transient disturbance of the internal physical fields.

The increased transiency of bioelectrical activity processes in the human cerebral cortex, during solution of complex logical problems, may be explained by the excitation of additional neural ensembles.

At a specific degree of residual brain excitation as found, for example, in individuals with disturbed psychic functions, there is a displacement of the stable bioelectric activity reaction zones of the brain in the direction of increased values for the transient indicator. As a result of this increase, there is an increase in the probability of the ionization phenomena action of atmospheric origin on the psychic condition of the man.

An indicator, ρ, can be used in a number of cases to evaluate transient temporary (time) indicators. The indicator ρ is called a transient radius. The transient radius is determined by the expression:

$$\rho = \tau_1 \left[\frac{\tau_2^2}{\tau_2 \tau_3 - \tau_3^2} \right]$$

where

$$\tau_3 = \int_0^T \left| R_N(\tau) \right|^3 d\tau$$

is a correlation interval of the third order.

Sometimes during analysis of the experimental data, it becomes necessary to account not only for the structural properties of random processes but also for its energetic characteristics. The evaluation of the energetic and structural properties of the random process can be conducted on the basis of the expression:

$$L_3(t) = \frac{\sigma^2(t)}{\tau_2(t)}$$

where $\sigma^2(t)$ is the instantaneous energy of the investigated signal. Considering the relationship in the form of

$$\tau_2(t) = \frac{\tau_1(t)}{\psi(t)}$$

and considering the strength of the relationship, the uncertain-

ty interval of the correlation of the first order τ_1 (t) is related to the width of the energetic spectrum, Δ F(t) in agreement with the expression:

$$\tau_1 = \frac{1}{2 \Delta F(t)}$$

Finally, we can transform this equation by the following expression:

$$L_3(t) = 2\sigma^2(t)\, \Delta F(t)\, \Psi(t)$$

Substituting the expression:

$$\Psi = e^{H_I - H_{II}}$$

for ψ (t), the energetic model of the transient signal can be represented finally in the form:

$$L_3(t) = 2\sigma^2(t)\, \Delta F(t)\, e^{H^I - H^{II}}$$

A graphical representation of the model of a transient signal telepathic in nature is shown in Figure 2.

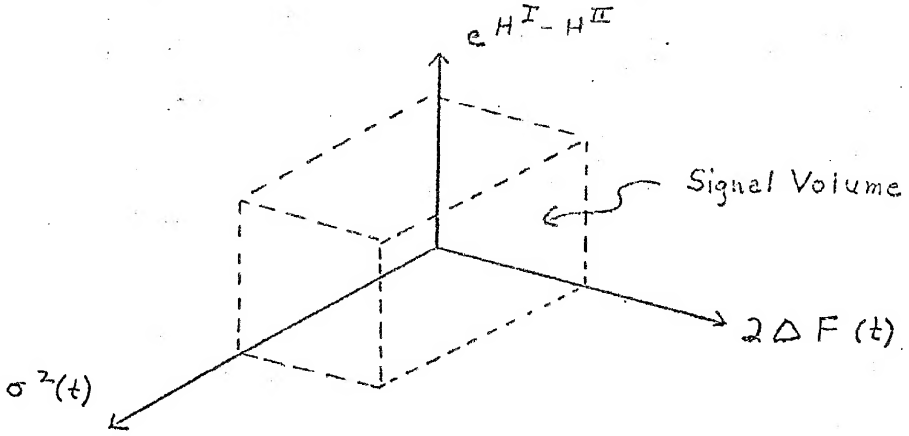


FIGURE 2

From Figure 2, it is evident that during stable spectral and energetic patterns, the signal "volume" and consequently the indicator L_3, essentially depend on the nature of the bio-

electrical activity processes transiency, i. e., on the level

$$\Delta H = H^{I} - H^{II}$$

Considering the fact that function $e^{H^{I} - H^{II}}$ is increasing during the time of emotional stress in a human being, it is not difficult to see that one of the important qualities of the sender is his ability to achieve a maximum degree of psychic excitation at the moment of telepathic signal transmission.

To confirm the existence of a correlational relationship between the degree of human emotional stress, according to the data of galvanic-skin reaction as registered through a contact method, and indicator L_3, calculated from the bioplasmogram data, recordings of the volumetric electrostatic charges fluctuations in the atmosphere (of the air) were made. The bioplasmogram was recorded at a distance of two meters from the subject who was in a calm state solving logical problems of different degrees of emotional stress.

Figure 3 shows the curves of indicators K G R ( ) and L_3, as calculated on a computer, which were in agreement with a psychological stress level. The recording of the bioplasmogram took six seconds. The maximum value of neuro-emotional stress is accompanied by a sharp increase of the parameter, L_3. An analysis has shown that the range of changes for the parameter $\frac{L_{3\,max}}{L_{3\,min}}$ reached the order of 30.

3. ELECTROPHYSIOLOGICAL CHARACTERISTICS (DURING INVESTIGATIONS) OF TELEPATHIC REACTIONS

During investigations of telepathic reactions, we have registered the following electrophysiological characteristics:

- tremorogram recording of vibrationary reactions of the hand in any states of neuro-emotional stress,
- electroencephalogram recording of brain biopotentials,
- electrocardiogram recording of the heart's electrical activity,
- bioplasmogram recording of the fluctuations in the volume of electrostatic charges of the (air) atmosphere, whose entropic properties may change in wide limits under the action of the electromagnetic radiation of the excited (activated) organism.

The establishment of a correlation of up to 80% between parameters of the bioplasmogram and the galvanic skin reaction of the human body allows us to examine the methodology of the bioplasmogram as an independent method of non-contact control for neuro-emotional human stress. According to this, the bioplasmogram may be considered as an example of the galvanic-skin reaction volume whose sensitivity may be increased through the calculation of indicator L_3. Investigations of the tremorogram, during telepathic experiments, have shown that essential change takes place in the frequency domain and spectral composition of the vibration reaction in the hands of a subject at different phases of the experiment.

Before the beginning of the telepathic session, Monin's parameters of the tremorogram were comprised of an average frequency $f_{av.} = 5.7$ hz and coefficient of frequency variation

$Kf = \frac{\sigma f}{fav} = 0.378$; Nikolaev's average frequency was $f_{av} = 7.1$ hz and $Kf = 0.376$.

Thus, a telepathic pair (Monin-- sender, and Nikolaev-- percipient) was noted by a more elevated tremor frequency compared with the data of the subjects from the control group, and also with its instability, which was related to the increased human ability to direct the body's vibrational reactions in the process of parapsychological experiments. At the end of the experiment, the tremorogram changed substantially and consisted of the following parameters:

Monin $f_{av} = 7.7$ hz and $K_f = 0.148$

Nikolaev $f_{av} = 9.1$ hz and $Kf = 0.238$

The tremor frequency and its stability increased. A spectral analysis has shown that at the end of the experiment the widening of the tremorogram spectrum increased approximately two times. This evidently is related to the increase of the high frequency reaction intensity of the neural ensembles under the influence of radiation on the human body by a plasma field of biological origin.

A visual analysis of the tremorogram, immediately prior to the beginning of the session of long distance transmission, allowed us to reveal the presence of a characteristic pulse modulation from within its structure that was caused by a short periodic overexcitation of the nervous system.

The tremorograph method may be used to select telepathic pairs. The procedure must be divided into two steps: first a contingent of subjects who do not have obvious psychic disturbances is selected by careful medical control. Then the trem-

orograms are recorded and subjects are selected with a tremor frequency coefficient indicator with variations of $0.2 < K_f < 0.5$. From those subjects telepathic pairs are eventually formed. For percipients it is advisable to use subjects who have high frequency tremorograms.

The electroencephalographic method combined with methods of statistical processing of biopotentials on computers allows us to recognize automatically the phases of a functional state of the brain which are more favorable to a specific rate of telepathic stress (percipient or sender). In this connection a very effective indicator is the transient radius ρ. Figure 4 shows topologically the characteristics of transiency zones in different areas of the brain, those whose radii correspond to indicator ρ.

As evident from the given data, a gradual increase of the transient radius of the biocurrents takes place in the direction of the frontal lobe during the sending procedure. Transient reactions of the brain biopotentials cannot continue over a long period of time in any phase of the experiment, which evidently is one of the basic reasons for the low stability of effective parapsychological reactions. Automatically controlled bioelectric activity transiency indicators of the brain processes may assure success in the reception and transmission of telepathic information.

Investigation of the encephalograms of U. I. Kamenskiy and K. Nikolaev during the experiments of telepathic transmission between Moscow and Leningrad in March, 1967, has shown that the optimum brain state favoring the reception of telepathic messages is preserved for 15 minutes with the repetition of this condition

after 2-3 hours. In telepathic experiments at short distances, the method of biocurrent modulation of the sender was used through the presentation of a light flicker. A frequency difference, $\Delta f = f_2 - f_1$, was discovered during the influence of flashes on the left and right eye with different frequencies f_1 and f_2 in the brain biopotential. During the recording of the biocurrents of the other subject who was in an electroencephalographic chamber and who did not have a preliminary setup for telepathic registration of encephalogram content, the modulation resultant Δf was detected which was caused by the reaction of the visual analyzers in the human sender.

In one of the fragments of the experiment, during transmission of telepathic messages over long distance, the content of the electroencephalogram of Nikolaev was analyzed. A curve of continuous transiency as an indicator is shown in Figure 5. At the moment of increased emotional stress a sharp increase of the indicator Ψ takes place. An effective control of ionized phenomena in the atmosphere (of the air), under the influence of factors of natural origin (cosmic radiation, the radiation of atmospheric phenomena, the infrared radiation of an excited human organism) can be realized with the aid of a special electrostatic detector, equipped with film which reduces the influence of low frequency fluctuations of the electrical field.

A similar detector which registers the fluctuation of the electrostatic charged volume is given the name of bioplasmogram detector.

An analysis of the content of microelectrostatic charges in atmospheric water vapors, caused by molecular rearrangements

under the influence of infrared radiation from the organism, shows that fluctuations of the dielectric characteristics of the gas medium may reach up to twice that of the relative background level and at the same time produce a modulation of the bioplasmogram.

The bioplasmogram spectra fall in close proximity to the encephalogram and closely correspond to it. There is a considerable degree of correlation between the spectra of the bioplasmogram and the encephalogram during a calm, even-tempered human state.

For confirmation, curves are presented in Figure 6 which show distortions of spectral densities of the bioplasmogram and encephalogram which were registered from the same area of the head at different stages of emotional excitation. Considerable differences of spectral characteristics occur at a moment of increased human emotional stress when the content of the bioplasmogram is essentially influenced by structural rearrangements of the electrostatic plasma of the air.

Figure 7 shows the change in the background of the bioplasmogram at different times of the day which has a sharply indicated periodic character. Guided by this curve, it is possible to control the levels of the ionized background which form the optimal condition from the point of view of telepathic contacts.

Samples of the bioplasmogram spectrum of the same individual in different phases of emotional stress are shown in Figure 8 at the moment that the widening of the bioplasmogram spectrum occurs due to emotional excitation. Substantial information about objectivization of the parapsychological condition is con-

tained in the recording of heart reactions. The heart is a highly sensitive detector of telepathic information capable in wide limits of changing its frequency-selective properties, and thereby detecting an informational reaction caused by a signal of a telepathic nature.

These distinctive features of the heart's reactions (dynamic arythmia) can be explained by special properties of the rhythm-pacer cells, which can generate periodic fluctuations, interfering in a sufficiently complex way with excited cells in the different regions of the heart.

The frequency of the heartbeat is not a stable parameter, as is apparently assumed by many individuals including medical doctors, but is continuously changing under the influence of factors of emotional and telepathic origin.

Thus, during the performance of a telepathic experiment between Moscow and Leningrad on March 16, 1967, the successive heart arythmias of Nikolaev the percipient were recorded during the receiving of a telepathic message (recording) which consisted of a series of emotional reactions of short (dot) and longer (dash) duration.

Corresponding results in the form of a curve showing the changes in the parameter L_3 are presented in Figure 9. The shaded area corresponds to the subjective reaction of the percipient and is related to the recording of the beginning and the final moments of the telepathic signal reception.

During an analysis of telepathic reactions at short distances, we have observed a complete synchronization of the cardiograms

of the two subjects during a 3-5 minute interval.

The following indicators were calculated to investigate the frequency components of the cardiogram:

- average period of arythmia T ;
- average square deviation σ_T ;
- variation coefficient $\delta_T = \frac{\sigma_T}{T}$;
- coefficient of mutual correlation of arythmia in the sender and the percipient K_B;

TABLE 2. INDICATORS OF HEART ARYTHMIA

Transmission Mode	Photostimulation								Long Distance Communication				Short Distance Communication			
Photostimulation Frequency	0.316hz				0.415hz											
Parameters	T	σ_T	∂_T	K_{B3}	T	σ_T	∂_T	K_{B3}	T	σ_T	∂_T		T	σ_T	∂_T	K_{B3}
Nikolaev	58	2.04	0.035	0.37	60	6.9	0.115	0.74	62	3.1	0.05		64	2.5	0.042	1.0
Kamenskiy	62	3.1	0.05		59	3.5	0.06									

Approved For Release 2001/03/07 : CIA-RDP96-00787R000500340001-1

From Table 2 it is evident that the variation of the arythmia can be changed more than three times from 0.035 to 0.115.

During the influence of the light flickers, decorrelation of the heart arythmia occurs depending on the photostimulation frequency and may consist of from 0.37 to 0.74.

It is interesting to note that during long distance communication (reception of telepathic messages from Moscow), statistical indicators of functional arythmia in the percipient Nikolaev agree within 15% limits with data which were obtained from the spectral analysis made on the computer of heart arythmia during short distance communication. This leads to the conclusion that the principle of noise modulation of functional arythmia is optimum from the viewpoint of the informational capacity of the communication channel which consists of from 0.2 to 1 bit.

The dispersion of functional arythmia changes within wide limits and at the same time creates a sufficient modulation range for energetic telepathic message parameters.

TABLE 3. ARYTHMIA DISPERSION IN DIFFERENT MODES OF TRANSMISSION OF TELEPATHIC INFORMATION

Transmission Mode	Long Distance Communication		Trance State	Shorter Communication	Photostimulation
	Reception	Transmission			
Nikolaev	88	176	47	180	--
Kamenskiy	--	--	--	189	387

The normalized spectral density of the heart arythmia is

approximated by the expression in the following form:

$$G(w) = \tau_0 \left[\frac{\sin \frac{w \tilde{\tau}_0}{2}}{\frac{w \tilde{\tau}_0}{2}} \right]^2$$

where $\tilde{\tau}_0$ = correlation interval of heart arythmia.

In our case, $\tilde{\tau}_0$ = 6 sec. The spectrum of heart arythmia is basically limited by frequencies from 0.05 to 0.3 hz.

4. EXPERIMENTAL INVESTIGATIONS OF TELEKINETIC (K.N.S.) PHENOMENA

This special section of experimental parapsychology represents investigations of the biophysical reactions discovered in Nina Sergeevna Kulagina, i.e. her phenomenal capacity for energetic influence on external objects.

The literature describes multivaried experiments in the telekinesis effect, basically reflecting a qualitative approach to these unusual biophysical relationships.

Our lengthy, efficient, scientific and friendly contact with Kulagina's family provides us with a basis for confirming the published data about the telekinetic abilities of Nina Sergeevna (Kulagina); but at the same time we note (the circumstances) that in reality the range of parapsychological manifestations of this unusual person considerably exceeds the information volume of the parapsychological literature on telekinetic phenomena (KNS). Nina Sergeevna (Kulagina) offered a valuable contribution to a study of physical relationships which include the essence of such rare biophysical reactions of the human organism as (exemplified by) telekinesis, telesthesia, psychophotography, biophysical reaction (effects of the dowsing rod), etc. Highly valuable evidence was also obtained in the investigation project of the physiochemical structure of the atmosphere and various materials under the influence of the energetic field of Kulagina. Further, we discuss mainly the peculiarities of the physical characteristics of the external material and biological medium as discovered during the experiments with (N. S.) Kulagina.

Thus, in one of the experiments the ion currents were measured

between two capacity plates which had been connected to an electrometer with a recording capacity. The head of the subject was located between those plates which were placed 3 meters apart.

Because of the low electrostatic conductivity of the (atmospheric) air, the currents in the electrometrical measuring chain were absent until the moment when Kulagina did not (offer to) attempt to produce emotional stress of an extreme nature. At a similar moment of stress, an ionic current occurred in the air layer located between the plates whose oscillogram is shown in Figure 10.

The output of this ionic current exceeds ten thousand times the levels of electrolization which were registered in a similar experiment from an emotionally excited normal individual. Even the influence of the electrolization of the atmosphere, caused by a presence of 500 individuals in the hall, had appeared insufficient to form an ionic current of the magnitude which was measured in the telekinetic effect (KNS). The mechanism of the ionic current from one aspect is evidently related to the increased ionization of the surrounding air under the influence of excitation in the head of Kulagina, and from another aspect, excitation of energy due to the electromagnetic radiation of the blood. Under the influence of these factors, the surrounding air takes on properties of a second order conductor (ionic) which is the reason for the appearance of ionic current.

Experimental proof of the hypothesis about increased levels of ionization and electromagnetic radiation of the blood was supported by the following experimental data:

- At the moment of increased emotional stress as experienced by (N. S.) Kulagina, photofilm can be exposed in total darkness.

This indicates the concentration of electronic (ionic) plasma sufficient to produce the effect of ionization of the surrounding air;

- The considerable output of the electromagnetic radiation from the blood is caused by forced blood circulation which is substantiated by cardiogram data. The pulse frequency in similar experiments reached 150 to 240 beats per minute. It is interesting to note (this circumstance,) that in the state near stress reaction, electrical receptors located on (N. S.) Kulagina's body intensively absorbed the electromagnetic energy caused by the ionization of the surrounding air.

This is substantiated by the data of (ionized) energy measurement of the ionized air near the body of the subject in the performance of different psychological tests.

The time-related curve of ionized energy is presented in Figure 11. From the figure, it is evident that at the moment of increased emotional stress (experimental setup for the telekinesis and burn reaction), the level of ionization decreases two to four times in comparison to the background state.

Analysis of the bioplasmogram recorded in these experiments has shown that absorption of ionized energy by the human body leads not only to spatial fluctuations in the ionized background but is also expressed in the electrostatic plasma content of the air.

Confirmation of this conclusion is demonstrated by the curve, dependence of the entropy on distance, obtained in experiments with (N. S.) Kulagina and also during recording of the bioplasmogram of an emotionally excited normal individual. In both cases, we observe a decrease of entropy characteristics with distance (note

that this is a discussion about measurement of entropy levels in the form of $\Delta H = H^{I} - H^{II}$) which indicates an increased degree of transiency in the electrostatic plasma of the air near an individual experiencing emotional stress. Resonance excitation processes of specific structures of water vapor molecules have considerable influence on the character of the molecular rearrangement of electrostatic plasma in the air. Proof of this hypothesis (the resonance excitation of the electrostatic plasma in the air) was obtained through the spectrographic processing of film exposures which were caused by the bio-illuminescence effect. The content of film exposures had sharply outlined nonhomogeneous areas (optical granules) whose spectral properties are characterized by curves in Figure 12. From the figure, it is evident that the resonance of optical granules takes place, causing an increased level of radiation of the electromagnetic fluctuations in the infrared radiation spectrum. This radiation is caused by the electrostatic plasma in the air. Similar radiations are capable of beneficial biological effect on the diseased parts of organisms.

During the decay of the resonating electrostatic plasma near the surface of the body of the subject, the heat sensation may appear.

Nina Sergeevna (Kulagina) is capable of concentrating electrostatic resonating plasma on a large (diseased) organ of another individual, with a highly beneficial influence, which is not within the psychotherapeutical possibilities of contemporary medicine. Owing to this beneficial effect, healing of such diseases as obliterated endochrinitis (endoriit) can be achieved.

The curve of the relationship of bioplasmogram energy and entropy that is typical for the subject's thermal reaction is shown in Figure 13. A similar character of the curve, at which the indicator $t = \frac{\Delta \sigma}{\Delta H}$, is called structural temperature, has a negative value, and is typical for active radiation systems which are capable of radiating energy owing to the structural rearrangements at the atomic molecular level.

In our case, the energy is emitted in the form of infrared radiation (thermal) because of the decay of resonating excitational molecules of water vapors with relatively similar structures.

Having the capacity of controlling temporal and spatial characteristics of the resonating electrostatic plasma, Nina Sergeevna (Kulagina) can have biological influence on individuals who are located some distance away.

As an example, Figure 14 shows the curve of change in transiency indicators of the heart arythmia of a percipient influenced silently by (N. S.) Kulagina, sender, who was attempting to cause heart arythmia. A high degree of synchronization of indicators Ψ of the percipient and sender proves (the fact) that Nina Sergeevna (Kulagina) actually influences the heart functions of the subject and controls his arythmia.

Curves describing the frequency of the heartrate of the sender and percipient in the process of the experiment are presented in Figure 15.

In one of the experiments, which was done in cooperation with Dr. S. P. Sarachev, we succeeded in recording the electrocardiogram of the frog's heart exposed to the influence of the energetic radiation of (N. S.) Kulagina.

In these experiments, the hearts of frogs removed from their bodies were used as biological detectors.

During the absence of external sources of physical influence, heart detectors were capable of continued contraction activity for 1 - 15 hours. After the heart stopped biostimulation means were used and as a result the heartbeat was restored.

(N. S.) Kulagina offered to attempt to stop the heart detector through mental influence without touching it with her hands. At the same time, the cardiogram was continuously recorded whose sample is presented in Figure 16. In the process of the experiment, the subject commented on her actions, "Increase heartbeat frequency," "decrease heartbeat frequency," "stop the heart;" and for the same moment we have actually discovered a sharp increase of R notches on the cardiogram.

After the second trial to stop the heart, the heartbeat at once ceased.

Trials to restore the heartbeat were not successful because under the influence of Kulagina's field irreversible destruction of the heart pacer cells evidently occurred. The whole experiment lasted no more than five minutes and in the same evening it was repeated with similar results. In her own accounting, after the experiment, Kulagina said that she acted on the heart in exactly the same manner as she attempted to sway the pendulum of a clock by telekinetic force.

The action of resonating electrostatic plasma on external objects has been observed by us frequently in experiments in telekinesis. This property of resonating plasma appeared quite beneficial during the recording of photo tracks, and was characterized by dis-

placement of objects by telekinetic means.

In one of several similar experiments, an object having a capacity of amplifying resonance effects on the molecular level was placed on a black packet with clean (non-exposed) photopaper. Kulagina, not touching this object with her hands, and only concentrating on it with her glance, caused the displacement (movement) effect. After the developing of the photopaper, a sharp photographic imprint in the direction of the object's movement was discovered.

An example of a similar photographic track, registered in a telekinetic experiment, is presented in Figure 17.

Bioplasma was also registered in the experiments investigating biogeophysical reactions (dowsing rod).

For the purpose of control in those experiments, a geophysicist was enlisted who had the ability to discover geological anomalies. The same models of anomalies were selected which caused reliable reactions in Kulagina as well as in her partner, and these are expressed in a deflection of the frame by 30 - 40 degrees. At different phases of the experiments, bioplasma was registered.

Samples of Kulagina's bioplasmogram spectrum, before the beginning of the experiment and at the moment of biophysical reaction, are presented in Figure 18.

The bioplasmogram spectrum at the moment of deflection has a character similar to that which is generally observed during telekinesis. With this point of view in mind, there are bases for considering that the force that causes the deflection (rotation) of the frame has much in common with telekinetic influence which is

defined not by a translational but by a rotational character. The curve, describing an energetic parameter of the bioplasmogram at different phases of the experiment, is presented in Figure 19. A distinctive feature of the curve is the presence of a sharp maximum at the moment of frame deflection.

As a conclusion we would like to express our very sincere gratitude to V. V. Kulagina and his wife, N. S. Kulagina, whose unselfish dedication to the field of science allowed us to reveal unusual energetic reactions from a living organism.

Figure 1

рис 1

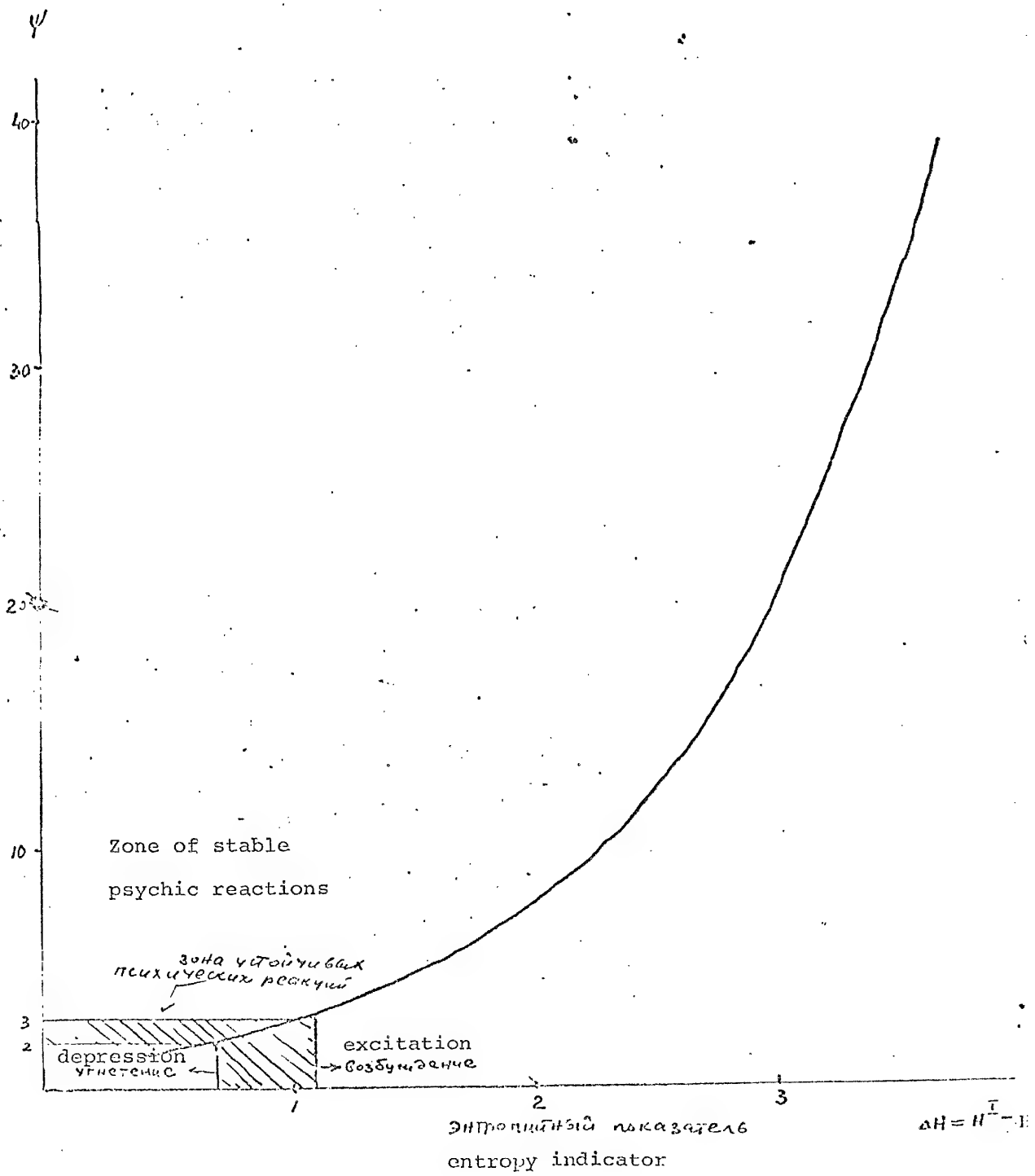
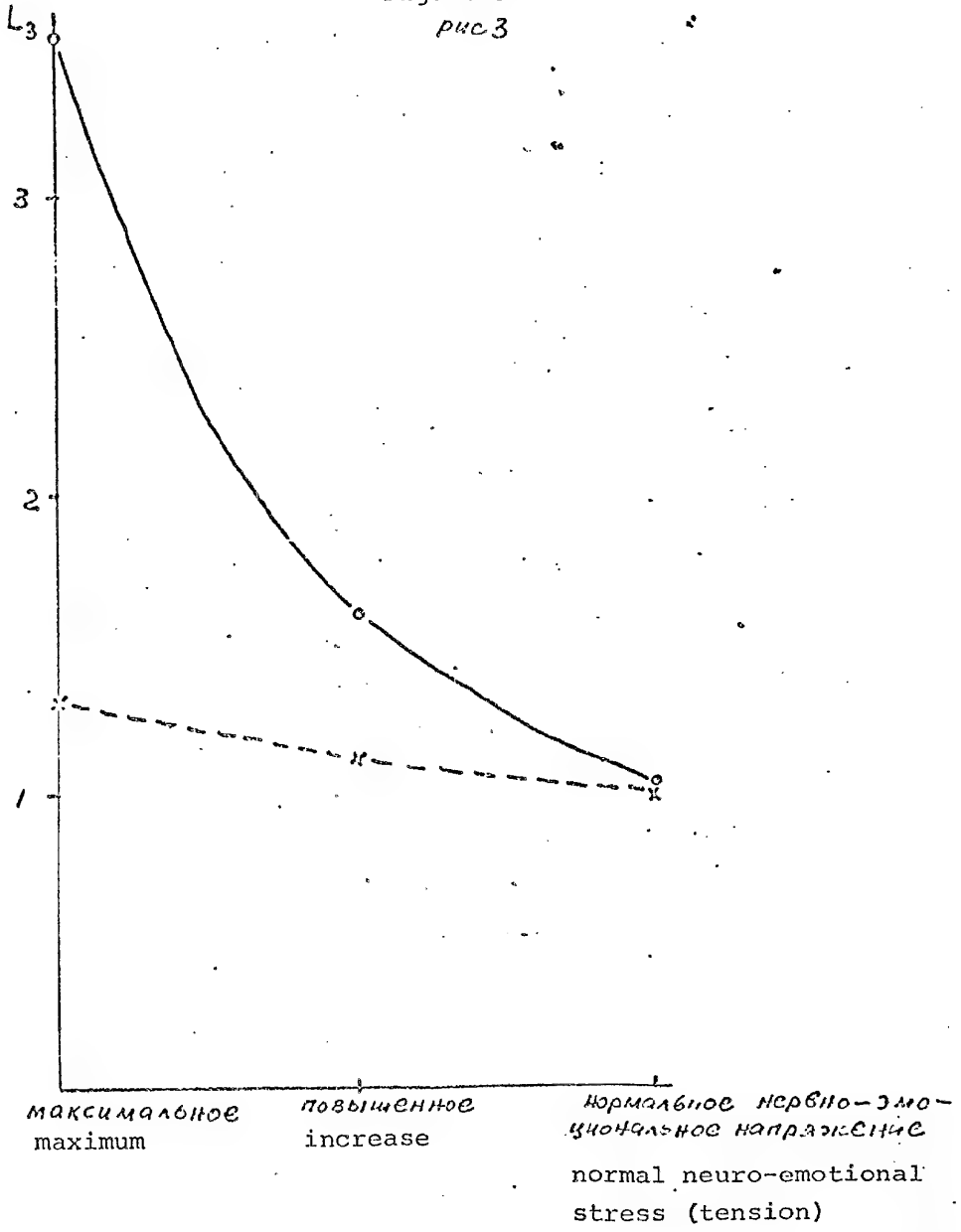
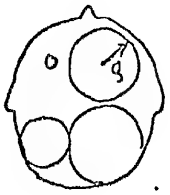
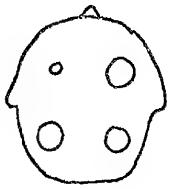


Figure 3
рис 3





а.



б.

Figure 4

рис 4

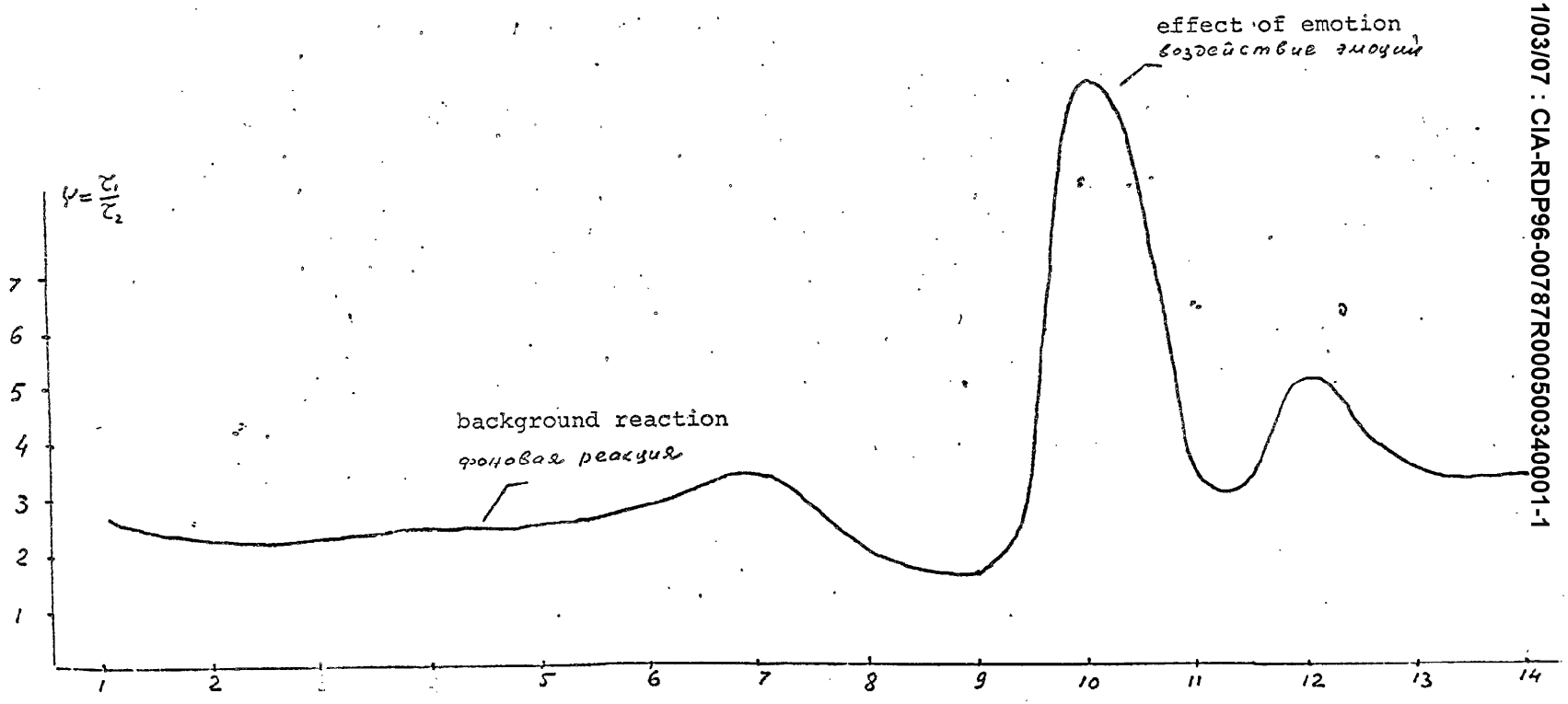
Figure 5

рис 5

Change in transiency indicator Ψ in Nikolaev's electroencephalogram during telepathic reaction on the emotional stress (tension) of the inductor (transmitter).

Нестационарность

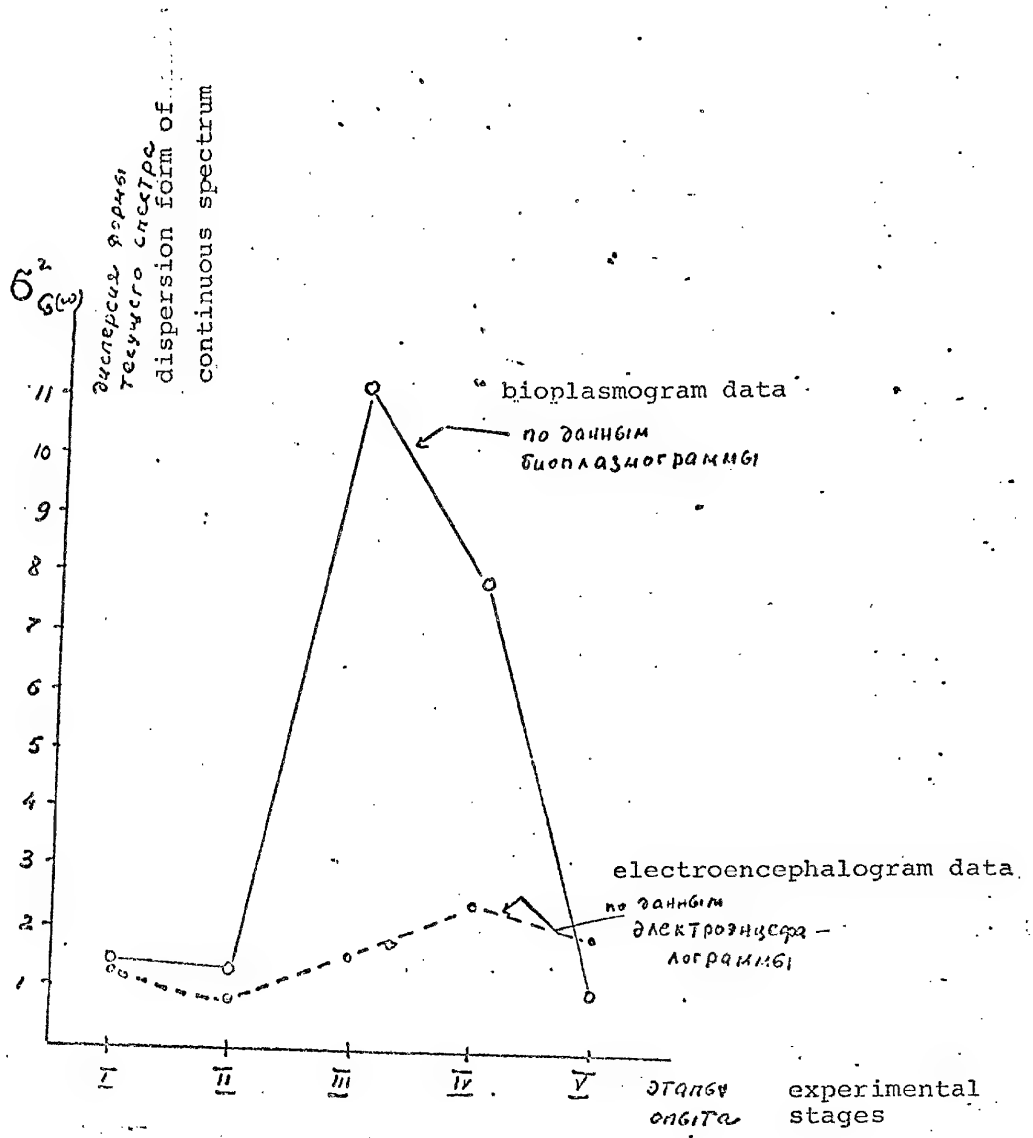
Изменение ~~информационного~~ показателя Ψ электроэнцефалограммы Николаева при телепатической реакции на эмоциональное напряжение индуктора



Approved For Release 2001/03/07 : CIA-RDP96-00787R000500340001-1

Figure 6

Рис 6



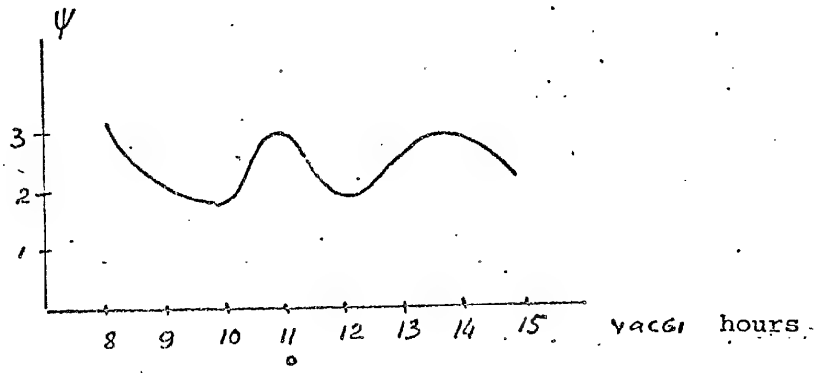
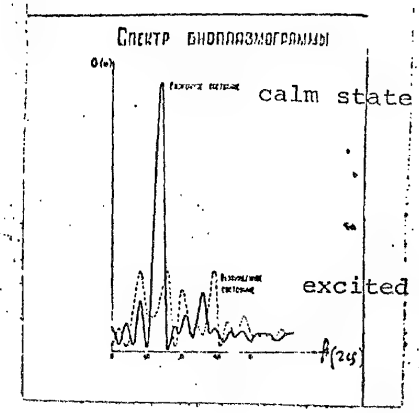


Figure 7

puc 7-

Figure 8

рис 8



BIOPLASMOGRAM SPECTRUM

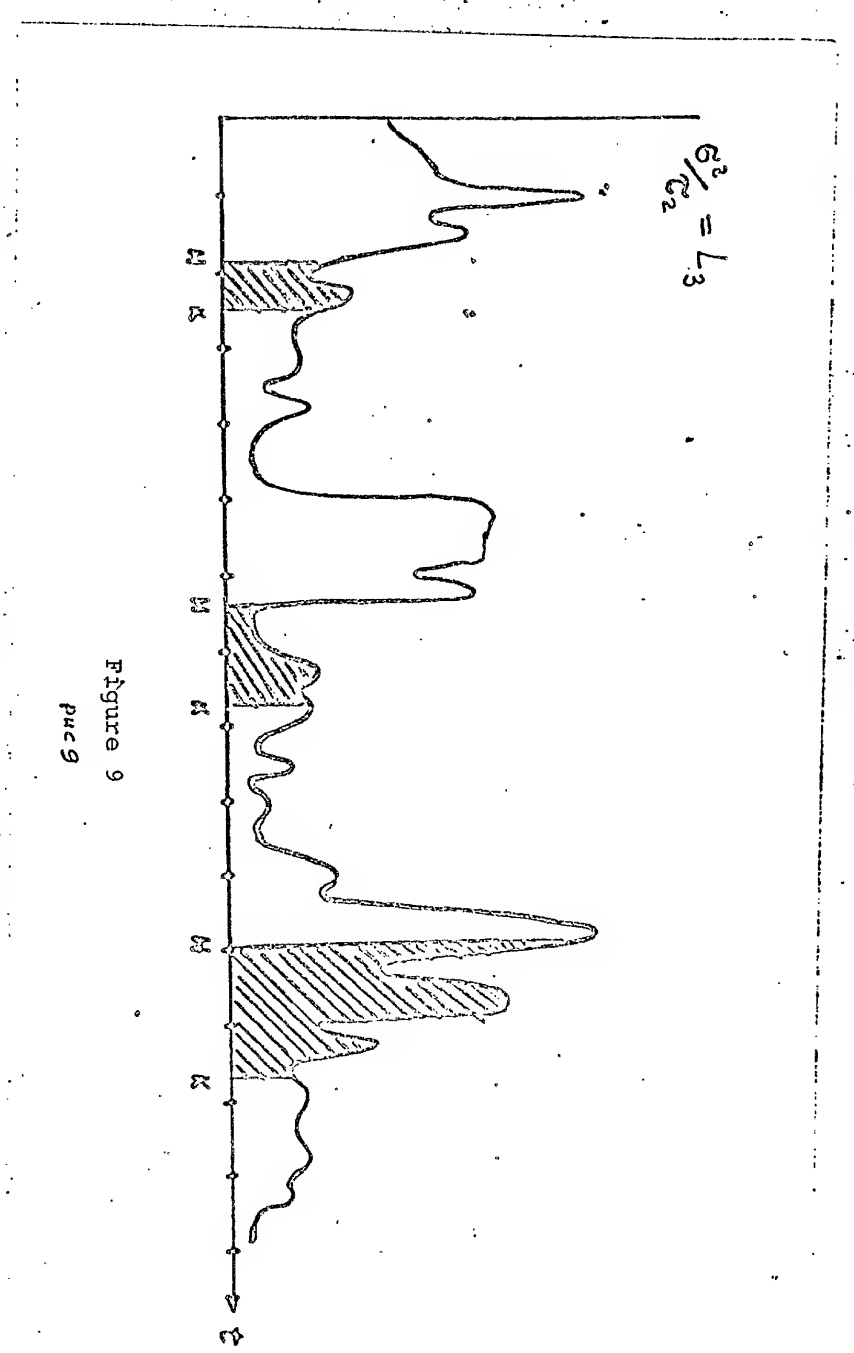


Figure 9

PHC 9

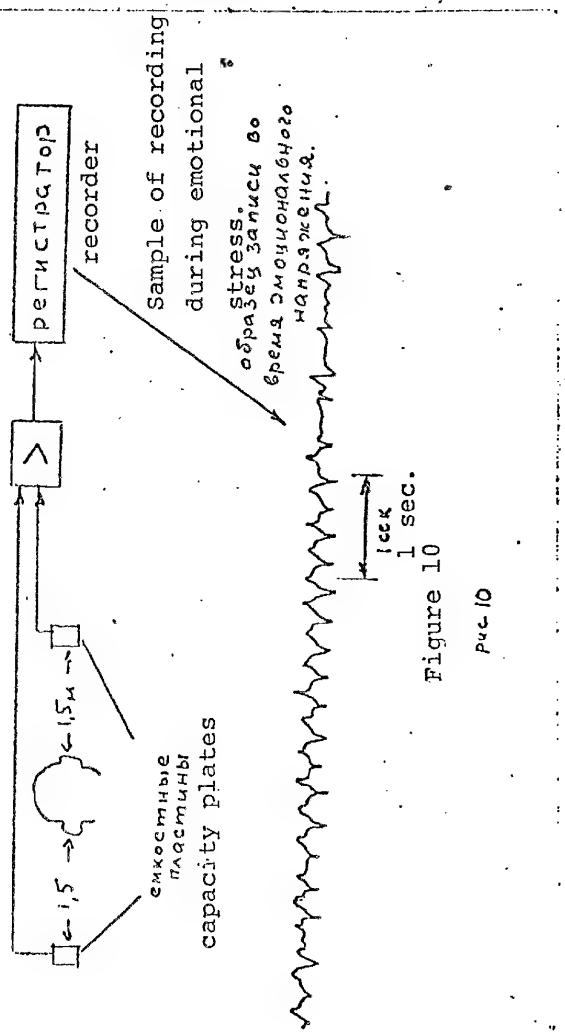


Figure 10

Рис. 10

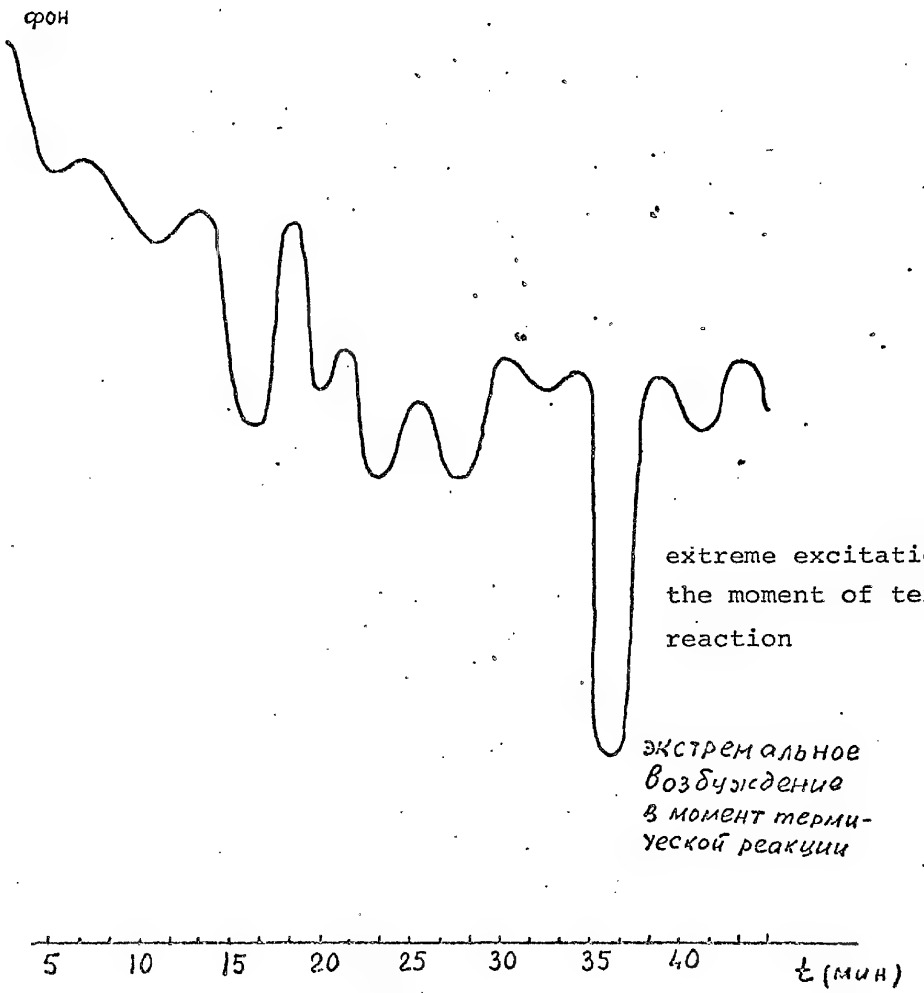
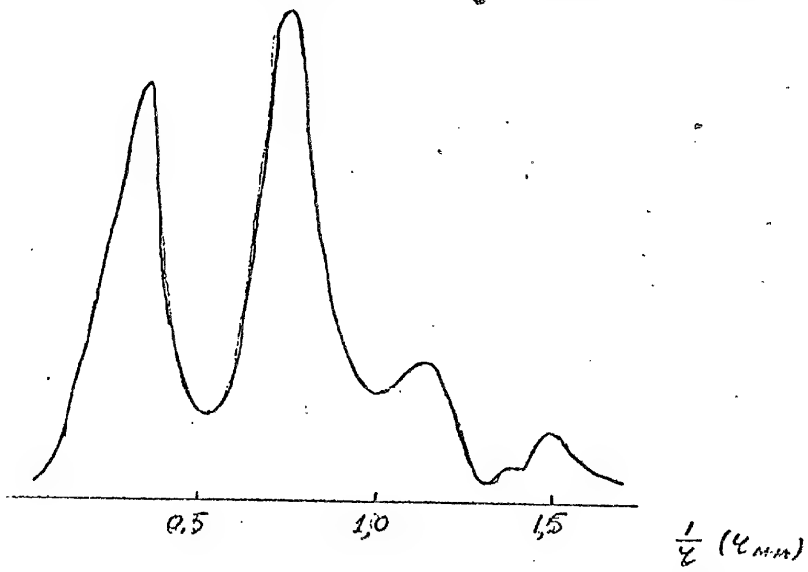


Figure 11

рис 11

Distribution spectrum of nonhomogeneous optical granules as a consequence of processing the photo-registergram film that has been exposed under the action of telekinetic (K.N.S.) bioilluminescence effect.

Спектр распределения неоднородных оптических гранул по результатам обработки фоторегистрограммы пленки засвеченной под воздействием эффекта биолюминесценции К.Н.С..



(величины обратные размерам оптических гранул)

(values are reciprocal to the dimensions of optical granules)

рис

Figure 12

рис 12

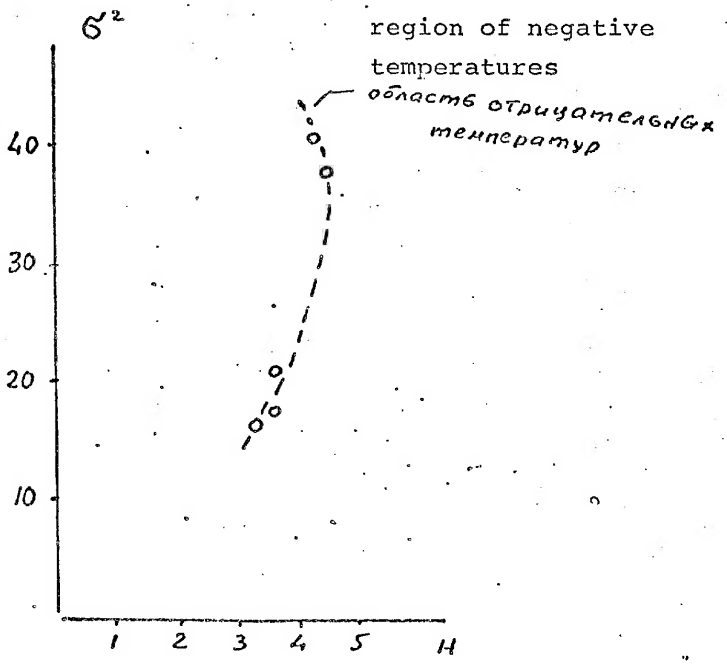


Figure 13
рис 13

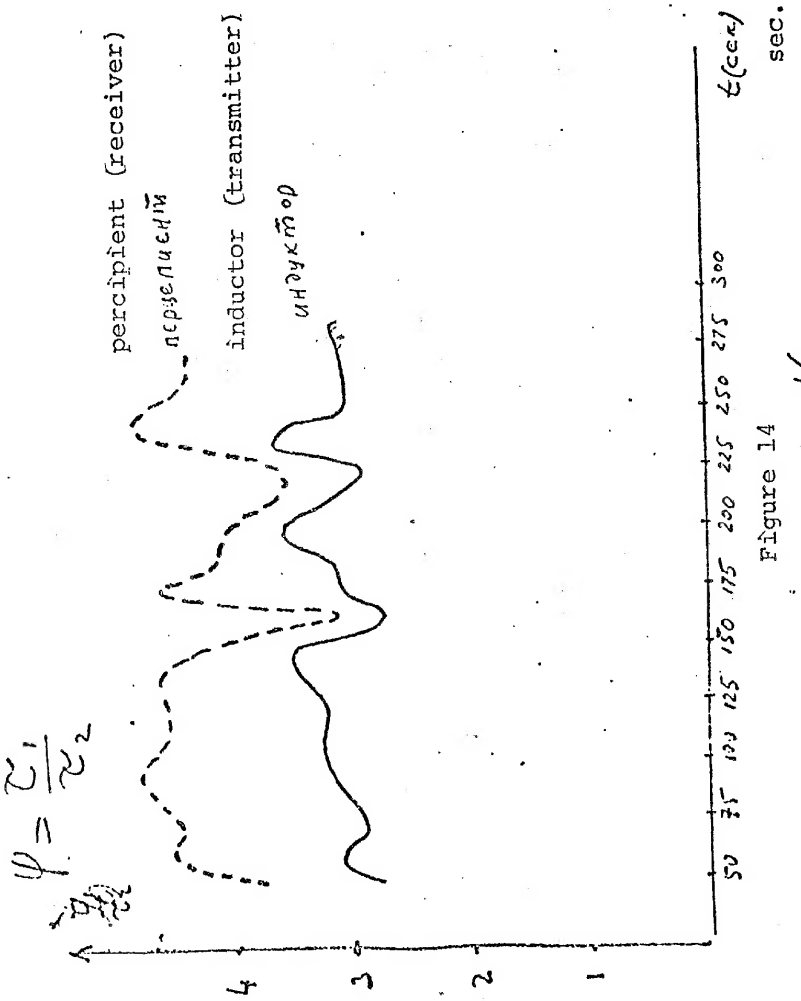


Figure 14

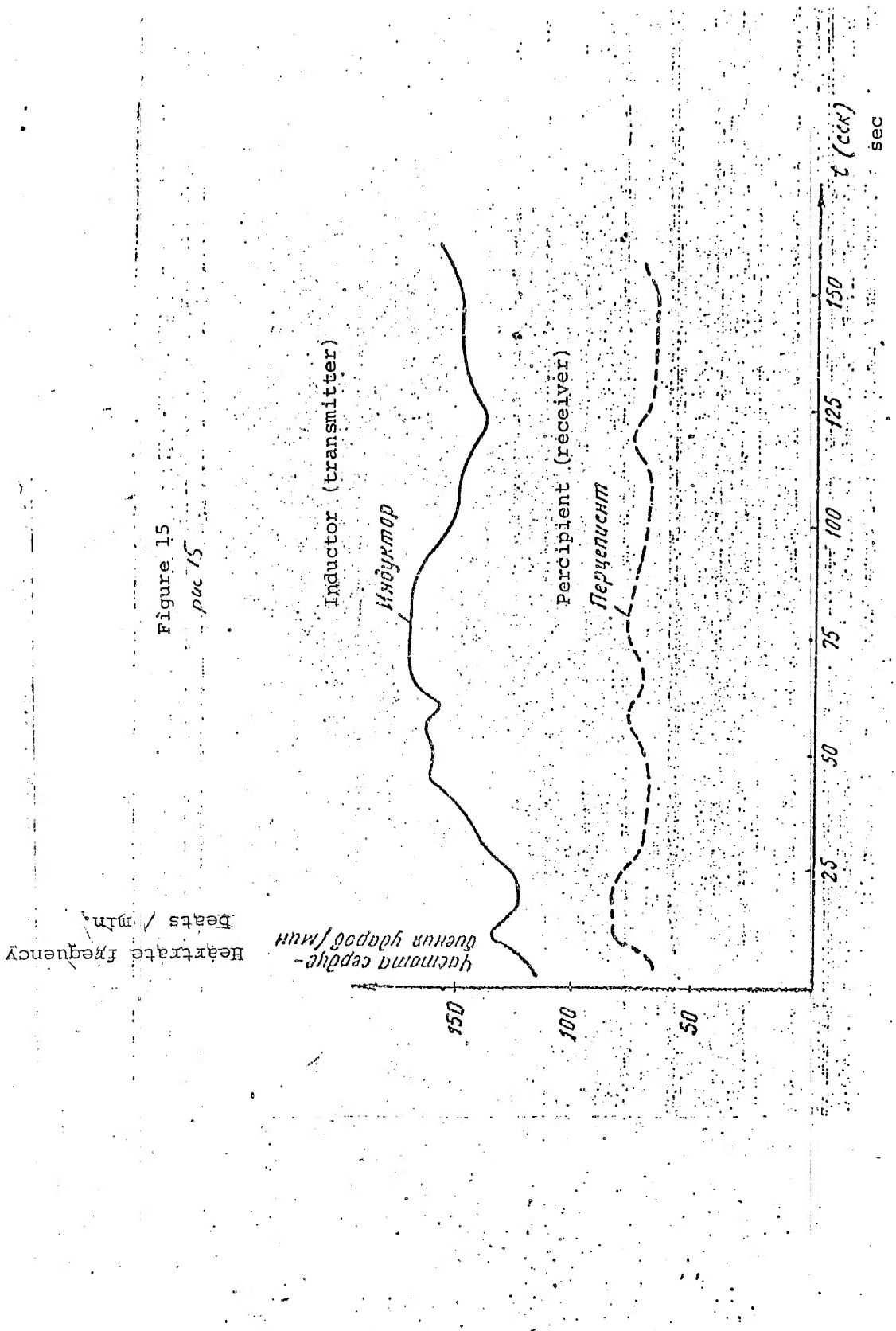


Figure 15
Рис 15

Figure 18

Рис 18